THE

COUNTREY School-Master,

OR,

THE ART

OF

Teaching FAIR-WRITING, and all the Useful Parts of *PRACTICAL-ARITHMETICK* in a *School-Method.*

To which is Added

Some Fair *GREEK COPIES* for the Use of *Grammar-Schools,*

All Engraven in Copper-Plates.

Composed and Ordered by JOHN NEWTON DD.

LONDON,
Printed and to be sold (with *School-Pastime, Natural Arithmetick, the Countrey School-Master, Fair-Writing's Storehouse, Pens Triumph, Pens Celerity, Pens Facility,* Porters *Description of the whole World, his Alphabetical Tables, the New and Truest sort of Travelmens Armes, with all other sorts of Maps and Pictures*) by
Rob. *Walton* at the *Globe* and *Compasses* at the
West-End of Saint *Pauls*, as you turn
towards *Ludgate*. 1673.

To the Right Worſhipful

HENRY NORVVOOD Eſquire

AND

MAYOR

OF THE

CITY OF GLOCESTER.

SIR,

YOU are the first Chief Magiſtrate in this Place ſince the Reformation of the Government therof, and by Gods Providence may be inſtrumental to make it riſe the higher for its fall; you have in this Place the means of re-building, not only the walls thereof, but of the whole Nation, which but few Places in England have beſides; the Foundation of ſuch a School, which if rightly employed, may do that great Work which the French King hath endeavoured after with great expence, but not fully effected, because begun with men not children; The Arts and Sciences can never ſo thorowly or ſo ſpeedily be brought into a Native Language, as by being inſtilled into Youth, to which purpoſe I have already written ſeveral Treatiſes of the ſeveral Arts, among which Arithmetick is none of the leaſt uſeful, though very much diſregarded, not only in Grammar-Schools and the Univerſities, but in Writing-Schools alſo, which if neglected in London, cannot be expected in Countrey-Schools; To ſupply which defect, I have at length procured ſe-

veral Plates to be Engraved, with the most useful Rules in that Noble Science, that Writing *and* Arithmetick *may go Hand in Hand, in which if I have done any thing to the Glory of God, and good of my Countrey, I have all the Compensation that I desire or expect; And to this end I present them to your View, and further to be made use of as you think fit: I shall however Rest*

Yours and his Countreys Servant,

J. NEVVTON.

TO THE

READER.

HAving lately Publiſhed a Plain and Brief Treatiſe of *Arithmetick*, I thought it not amiſs (eſpecially for ſuch as have not the Accommodation of ſuch Excellent Penmen as the City of *London* hath) to provide for Countrey-ſchools, ſuch Rules and Summes to be Engraven in a School-Method, as may ſerve to inſtruct Children, in ſo much of *Arithmetick* as will competently fit them for any Trade; And becauſe the Countrey is but meanly furniſhed with Maſters that are able to ſet good Copies for Children to write after, theſe Directions for *Arithmetick* are ſo Engraved, as that they will very well ſupply even that defect alſo: And I am of opinion, that our beſt Writing-Maſters would give themſelves a great deal of eaſe, and bring unſpeakable profit to their Scholars, if they would by this or the like Expedient, ſave themſelves the labour and trouble of writing ſo many Copies, as they daily do; for by this means they would have both better Copies for themſelves to write after, and more time to obſerve the manner of their Scholars writing, and to direct them when they do amiſs; Can any body imagine, that any Writing-Maſter whatſoever, doth write every Copie with all the skill he hath, or that he can uſe all care and diligence in the writing of them, when he hath perhaps

hath one hundred Copies or more to write; Printed Copies then, if well engraved, must need be much better, for the Scholar and for the Master too: These, I hope, which are contained in this Book, will not be found so contemptible, but that they will serve for that purpose, much better then most of the written Copies now used in *London* it self, of which here is great Variety of one and the same Hand, together with Letters both great and small; and for the use of Grammar-Schools a Greek-Copy also, such as do desire it may have what Numbers they will, without buying the whole book, for every Copy they want; this is the great inconvenience that doth attend all the Excellent Copy-Books as yet published; as if one or two Copies of a Hand were sufficient for a Child; no, nor one hundred neither; and would all Masters but teach their Scholars to Rule their own Books, as might be easily done, I appeal to all ingenious and unprejudiced Readers, whether it were not more ease for the Master, and much more profit for the Scholar also; By this Book of Copies then, my *Vulgar-Arithmetick* and *School-Pastime*, all School-Mystresses as well as Masters, might with a very little help so teach the young Gentlewomen committed to their charge, to read, write and cast Account, as would be much more for their advantage in their future life, then pricking in a clout, or tripping on a Toe; not that I dislike their learning to work, or dance, or sing: No, no, I would that they should competently have all these Accomplishments, only I pray pardon me, if *I* prefer (even for the persons of greatest Quality) the other endowments of true spelling, reading, writing and casting Account before these. *I* will not urge the Practice of our Neighbours in *Holland*, to avouch my opinion, though *I* could wish that we would not let that Countrey out-do us by their indefatigable pains: but *I* will minde you of that Maiden Queen of Blessed Memory, Queen *Elizabeth*: let her Learning be your Pattern, whose knowledge in *Greek* and *Latin* hath made her famous to all Posterity: These things *I* would have all Youth to do, but not to leave ought else undone, which may bring glory to God, good to his Church, and either credit or profit to themselves; if any thing therefore as to the matter of the Book, *I* mean the Rules for Arithmetick seem hard to be understood, the Masters instruction, or my

other

other Book of Arithmetick, or both together, must be thy assistance, to which or the like Treatise *I* recommend thee, and for what profit thou reapest by this my Endeavors, if God may be thereby glorified, *I* have the utmost of mine end, and shall now and ever Rest

Thine in the Lord,

J. NEWTON.

Multiplication of Severall denominations

To multiply these names them first reduce
And then proceed according unto use
The value of wch fact if you would know
An Integer reduced and Squard will show
If you ask how: the Answere is at hand
By that divide and you have yo comand

If 2 ℓ 9 ß 6 ₰ be multiplied by it selfe
what is the product

If 3 ℓ 19 ß 11 ₰ be multiplied by 2 ℓ
13 ß 6 ₰ Wt is ye product Ans: 8 13 9

Division of severall Denominations

Division to vse thus if you have vse
An Integer to its least termes Reduce
which being drawne into your dividend
Proceed to find y^e^ Quote you did intend
The value of such Quotent is made knowne
As in Reduction was to you foreshowne

If $\overset{li}{6}.\overset{s}{2}.\overset{d}{6}\frac{3}{5}$ be divided by $\overset{li}{2}\frac{2}{9}\overset{s}{6}$
what is y^e^ Quotient facit $\overset{li}{2}\frac{9}{9}\overset{s}{6}$

If $\overset{li}{9}.\overset{s}{4}.\overset{d}{3}$ be divided by $\overset{li}{1}.\overset{s}{13}.\overset{d}{4}$
what is the quotient;

Reduction of Decimalls

Or how to find the Decimall answering to any fraction whether of one or more Denomination

Reduction now I shew which we do call,
Of Vulgar fractions into Decimall,
The which is by Division common wrought,
And ye Divisor us'd must thus be Sought.
The number of parts, which doth ye whole compose.
Is that which must ye Decimall disclose.

Of even shillings under twenty, take
The halfe; so you the Decimal shall make.
Farthings by ninty Six, pence twenty fouze.
Divide, to find your Number evermore.

What is ye Decimall of 15s : 7d : 3r.

Reduction of Decimals

Ascending

Or how to find ye value of Decimal
fractions, in the knowne parts of any
Integer:

The value of these partsif you would know.
Multiplication will them to you shew.
If you successively your Products make
By those less names y' are with ease to take.

What is ye value of 97638 li in shillings
Pence & farthings Ans 19 s 6 d 3 qu

Addition

from whole numbers differs thus.
A point is put betweene to sever us.

23:7025	32:5472
17:3614	12:6317
9:6938	8:2158

Notation

First Numbers describes then reads
Their Names their Values Places Periods

The Table

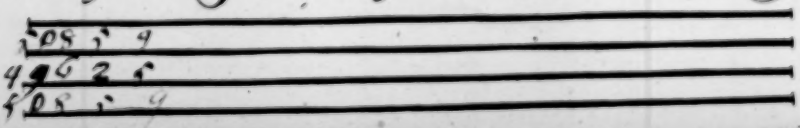
Names	Millions			Thousands			Unites		
Values	C	X	I	C	X	I	C	X	I
Places	9	8	7	6	5	4	3	2	1
Periods	Third			Second			First		
	1	1	1	1	1	1	1	1	1
	2	2	2	2	2	2	2	2	2
	3	3	3	3	3	3	3	3	3
	4	4	4	4	4	4	4	4	4
	5	5	5	5	5	5	5	5	5
	6	6	6	6	6	6	6	6	6
	7	7	7	7	7	7	7	7	7
	8	8	8	8	8	8	8	8	8
	9	9	9	9	9	9	9	9	9
	1	2	3	4	5	6	7	8	9
		9	8	7	6	5	4	3	2
			8	7	6	5	4	3	2
				7	6	5	4	3	2
					6	5	4	3	2
						5	4	3	2
							4	3	2
								3	2

Addition

Various Numbers doth collect Into one Totall equall in effect

Example

1234	2789	1260
2679	1620	3742
1563	4793	8473
4876	3467	7525
6764	6792	6794
7651	4563	2436
4279	1470	4769
2561	2568	1254
1756	7453	2708
3627	2624	3250
6574	1762	1497
7295	2594	3285



Subtraction

From a greater takes a lesse
And thereby Shewes the Difference or Excesse

Example

7856	9624	7361
3671	3786	5047
4185	5838	2314
7950	9624	7361

5617	6672	8450
2956	3468	2674
2661	3204	5776
2647	3672	8450

Multiplication Table

3 times 3 is 9
3 4 is 12
3 5 is 15
3 6 is 18
3 7 is 21
3 8 is 24
3 9 is 27

4 times 4 is 16
5 4 is 20
6 4 is 24
7 4 is 28
8 4 is 32
9 4 is 36

5 times 5 is 25
6 5 is 30
7 5 is 35
8 5 is 40
9 5 is 45
5 9 is 45

6 times 6 is 36
7 6 is 42
8 6 is 48
9 6 is 54

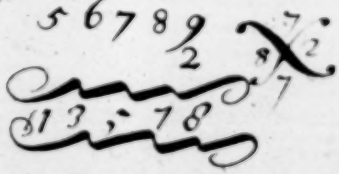
7 times 7 is 49
8 7 is 56
9 7 is 63

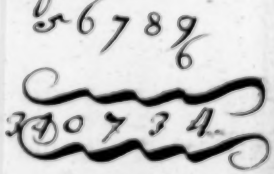
8 times 8 is 64
9 8 is 72
9 8 is 81

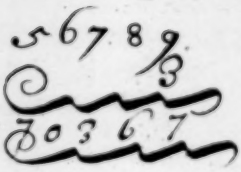
12 times 2 is 24
12 3 is 36
12 4 is 48
12 5 is 60
12 6 is 72
12 7 is 84
12 8 is 96
12 9 is 108
12 10 is 120
12 11 is 132
12 12 is 144

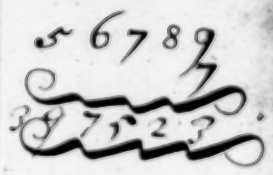
Multiplication

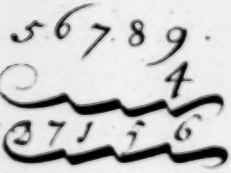
doth a number find
In which both numbers ain are so combind
As that ye greater doth still greater grow
As unites from the lesser number flow

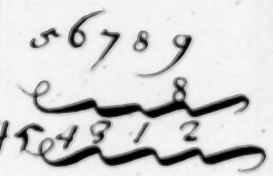


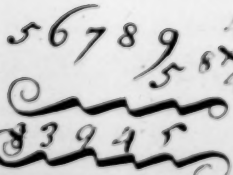


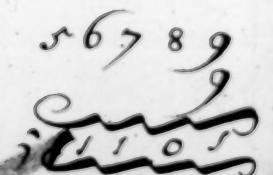












56789 × 2 = 113578

56789 × 6 = 340734

56789 × 3 = 170367

56789 × 7 = 397523

56789 × 4 = 227156

56789 × 8 = 454312

56789 × 5 = 283945

56789 × 9 = 511101

Examples in whole Numbers of Multiplication

583692 $\frac{3}{6}\times\frac{2}{3}$
47

4085844
2334768
27433524

2581634 $\frac{2}{2}\times\frac{0}{0}$
63

7744902
7749804
85242942

472569
638

7492583
279

Division

shewth how a greater sume
Doth to the units of a Lesser come
First ask how oft in Quotiant answere make
Multiply Subduct new divide all take

2	1 1 3 5 7 8
3	1 7 0 3 6 7
4	2 2 7 1 5 6
5	2 8 3 9 4 5
6	3 4 7 0 3 4
7	3 9 7 5 2 3
8	4 5 4 3 1 2
9	5 1 1 1 0 1

Examples of Division in Whole Numbers

47	1	2 7 5 3 5 2 4
94	2	
141	3	
188	4	
235	5	
282	6	
329	7	
376	8	
423	9	

638	1	3 0 2 4 9 9 0 2 2
1276	2	
1914	3	
2552	4	
3190	5	
3828	6	
4466	7	
5104	8	
5742	9	

Reduction of Severall denom: Descending

Reduction shewes, how we of names in use.
May great to less or less to great Reduce.
If greatest names next, less doe multiply
The product will ye number sought descry,
So that you doe as many products make,
As lesser names there are ith case to take.

Pounds	multiplied	20	produce	Shillings
Shillings		12		Pence
Pence		04		Farthings

In 369 £ 7 ß 5 d how many farthings

In 743 £ 18 ß. 11 d how many farth

Redution of severall denom:

Ascending

If least names you byth next aboue divide
The Quotent will the number sought decide
So that you doe as many Quotents finde
As greater names you have of ye same kind

Farthings	divided by	4	produce	pence
Pence		12		shill:
Shillings		20		pounds

In 354596 farthings how many pounds

In 714188 farthings how many pounds

Addition of Money

Addition when a lesser name amounts to the next above: adds it to his account.

£	s	d	q	£	s	d	q
723	18	10	1	124	13	10	0
274	17	02	2	072	19	00	1
259	12	07	3	259	18	02	2
370	16	09	1	167	15	07	1
264	13	05	2	325	16	11	0
379	19	07	0	764	17	09	0
602	16	11	2	274	15	07	0
124	17	00	3	689	18	10	3
083	16	03	1	374	19	04	1
365	18	10	2	426	12	10	2
149	10	11	0	769	14	00	2

Addition of Weight

Wherein 8 drames maxes an oz 16 oz is 1 ℔
28 ℔ a qr 4 qr a C and 20 C a Tunn &c

℔	qr	℔	oz
61	0	15	12
52	1	19	10
20	3	24	07
07	1	06	09
26	2	18	15
72	1	19	12
13	0	10	10
14	3	25	08
16	1	26	14
45	1	19	02
75	0	26	15
27	2	15	10

Tunns	C	qr	oz
254	17	1	15
160	19	0	19
3,07	12	0	07
624	07	2	16
152	16	1	25
264	15	3	27
109	19	1	06
463	17	1	15
174	13	0	19
529	15	2	10
765	16	0	14
426	19	1	16

Reduction

Of all common Fractions I
Am now to Shew, wch you may thus espie;
And to bring first a Greater to a less
By that aboue the name below I guess:
You must divide: what doth remaine is still
your next Divisor: to effect you will.
What your Divisor was, your Dividend
Successively must be, unto the End.
Your last Divisor; is the measure sought,
By which dividing both, the worke is wrought.

What is yᵉ Equavilent fraction of $\frac{14}{63}$ when
reduced to its least termes Ans $\frac{2}{9}$

Reduction of Two Fractions of Diverse Denominations

Two vulger fractions if of Diverse name,
Crosewise being Multiplied produce the same.
In value. and theire Nominators. must
Be of the former name y^e^ product iust.

If $\frac{3}{4}$ and $\frac{5}{6}$ were given to be reduced to fractions of y^e^ same Denomination what are their Equivo: lent fractions Ans $\frac{18}{24}$ and $\frac{20}{24}$

If $\frac{6}{7}$ and $\frac{7}{9}$ were given to be reduced to fractions of y^e^ same denomination what will their equiva lent fractions be: Ans $\frac{54}{63}$ and $\frac{56}{63}$

If $\frac{4}{6}$ and $\frac{6}{9}$ were given to be reduced into one Denomination w^t^ will be their equivalent frac: tions Ans: $\frac{36}{54}$ and $\frac{36}{54}$

Reduction of three or more fractions of divers Denominations

But if the fractions giu'are more then two.
To solve this worke theres somewhat more to doe:
Each Numerator must with name be throwne
Into one fact, excepting of his owne.
To all of wch ye common name must be.
The prodouct made of all ye names you see.

If $\frac{2}{5}$. $\frac{3}{7}$ and $\frac{4}{9}$ be given to be reduced into fractions of one Denomination What are there equivalent fractions Ans: $\frac{126}{315}$. $\frac{135}{315}$ $\frac{140}{315}$

Reduction of Fractions

of Fractions

All parts of parts one fact above require,
And one below, to give you your desire.

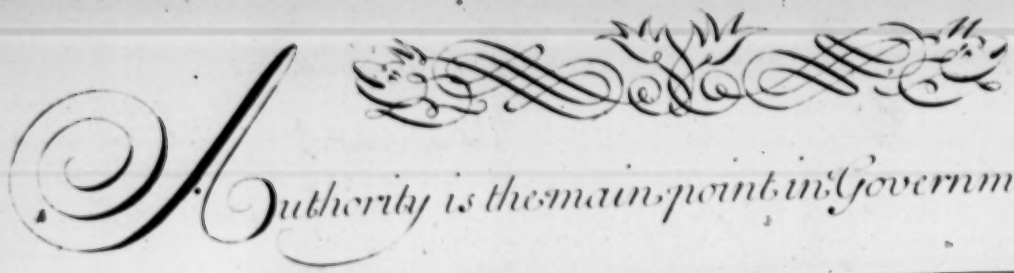
If $\frac{2}{3}$ of $\frac{3}{4}$ of $\frac{1}{5}$ were given to be reduced what
is y^{e} single fraction equivalent Ans: $\frac{2}{60}$ = $\frac{1}{30}$

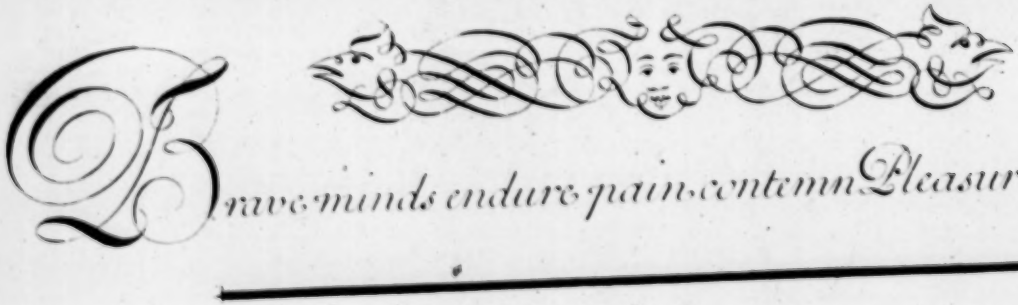
Addition

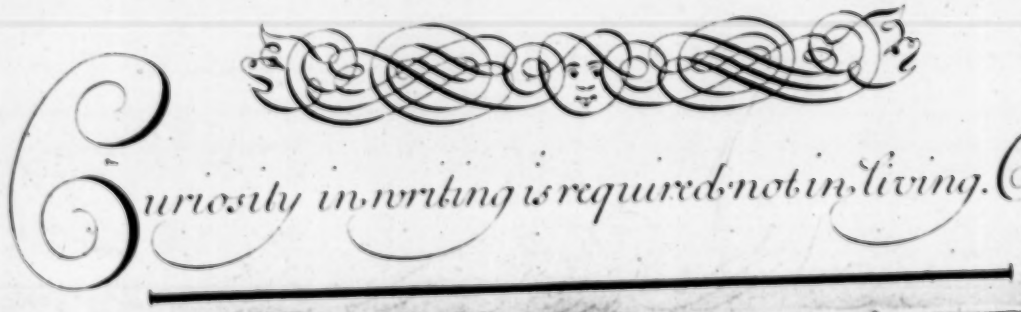
of parts when of one Name
Is with Addition common still y^{e} Same.
What is the sume of $\frac{3}{9}$ and $\frac{2}{9}$ facit $\frac{5}{9}$ =

Subduction

from Subduction doth not change,
If that y^{e} frations be of the same range.
If $\frac{2}{9}$ be taken from $\frac{5}{9}$ what remaineth Ans $\frac{3}{9}$


Authority is the main point in Government &c.


Brave minds endure pain contemn Pleasure B.


Curiosity in writing is required not in living. C

Dominion without Beneficence is grievous. D. 21

Envious men become their own Tormentors. E

Freindship is mortal but Enmity is immortal. F.

Government cannot be maintained without Rule: G.

Honer and promotion changemens Manners. H.

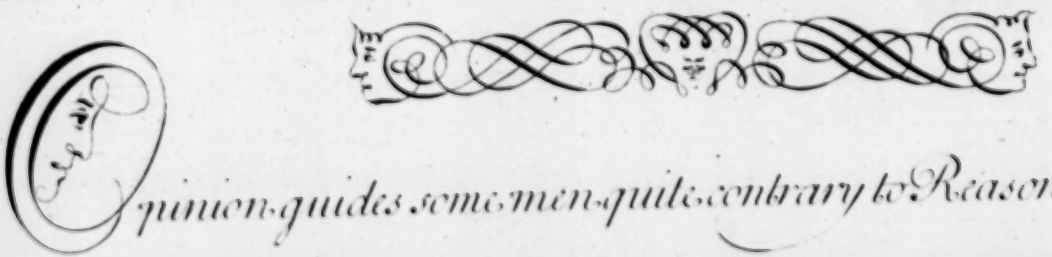
Ingenuitie is owing to nature; Learning to education. I.

Keep distance in writing, and time in Speaking. K.

Love Learning well, and become well Learned. L

Mens manners commonly forme their Fortunes. M

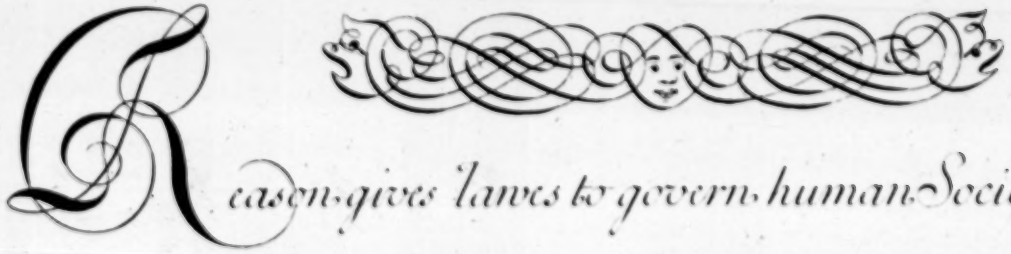
Nothing is pleasant that wanteth Varietie. N. V.



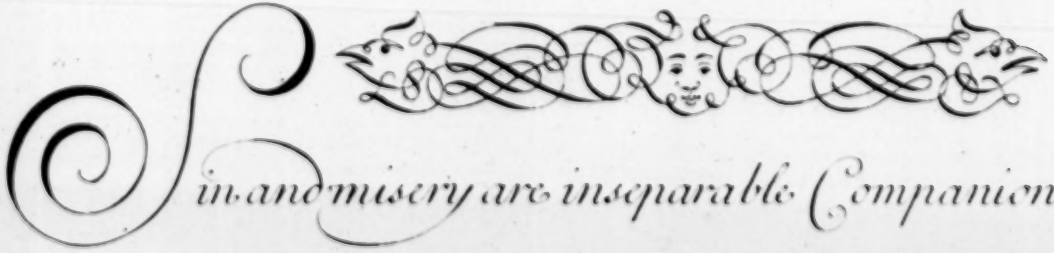
Opinion guides some men quite contrary to Reason. O.

Poverty wants many things, Covetousness all. P.

Quantity implies Division and Extention Q.



Reason gives laws to govern human Society R.



Sin and misery are inseparable Companions S.

The proud mans honer soon becomes his shame. T

Vertue, and Arts pirceed in the same Methods. V

Wisemen conceal their own private Misfortune. W

Xenocrates wanted spurs; Aristotle wanted Reins R

Young men must be Learners, old men Actors. Y

Zeal mixt with Prudence mounts mans Soul. Z